TELIDON REPORTS

| CONTENTS	PAGE

Special Report

The Department of Communications and
the Ministry of State for Science and
Technology recently released a study
on the effects of technology transfer
from DOC laboratories to the private
sector. The development of Telidon is
cited as a successful example of the
benefits of government and industry
working together. The Telidon case
history begins on page 5 of this
issue.

CABINET INCREASES TELIDON FUNDS

Communications Minister Francis Fox has
announced a $27.5 million increase in
funding for the federal Telidon program
over the next two years. The increased
federal spending is expected to
generate an additional $100 million
investment by private industry. The
minister told a press conference in
Ottawa February 6 that the extra money
will be used "to assure the existence
of a commercially viable videotex
industry in Canada with a capability to
compete in export markets."
"With this program and industry co-
operation, we expect to see more than
12,000 Telidon terminals in use within
a year," Mr. Fox said. The funding
increase will be spread over two years,
$17.2 million in 1981 and $10.2 million
in 1982. The extra money will be used
in the following areas:
—The manufacture of about 6,000
Telidon terminals in the next year to
be loaned to industrial concerns for
use in operational systems and market
trials, subject to their purchase of at
least an equal number and to the
advantages offered in their proposals
for use of the terminals.
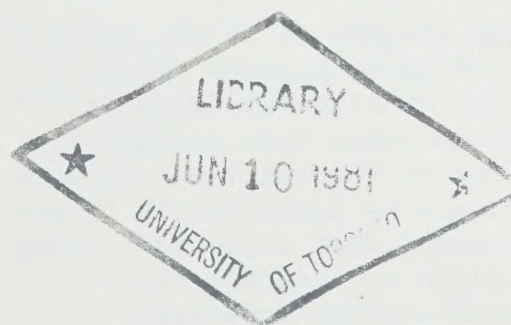
La version française de ce bulletin
peut être obtenue auprès de TELIDON du
MDC, pièce 2000, Tour Journal Sud,
300, rue Slater, Ottawa, Ontario,
Canada K1A 0C8

This newsletter is available upon
request from TELIDON, Room 2000,
Journal Tower South, 300 Slater,
Ottawa, Ontario, Canada K1A 0C8

--Product research and development to reduce the price and expand the capabilities of Telidon equipment. Projects include development of low cost Very Large Scale Integrated (VLSI) terminals, caption decoders for the hearing impaired, person-to-person hardware and new software.
--Support for certain important national and international Telidon systems, including a national broadcast teletext service in both languages.
--Support for market development and standards writing.
--Support for public interest initiatives to permit disadvantaged groups, minorities, the disabled and consumer organizations to exploit Telidon's potential.

"Let there be no mistake by anyone about the federal government's commitment to Telidon," Mr. Fox said: "We are convinced that it is quite simply the best videotex system in the world. We recognize, however, that our competitors are making heavy financial commitments to their technologies and their marketing efforts. This new commitment by the Canadian government and the commitments that will be forthcoming from Canadian industry should signal to all that Telidon is the videotex system to watch."

"The Telidon program is an investment in Canada's high technology future", Mr. Fox said: "Market forecasts by industry consultants have estimated that from one to four million videotex terminals could be installed in Canada in this decade. That alone represents some $1 billion to Canada's electronics manufacturing industry."
"The electronic information

industry has the potential of becoming a major sector of the Canadian economy."

TELEGLOBE TELIDON SERVICE

Teleglobe Canada has launched a three-year program to develop an international data base and Telidon videotex service to provide information to businesses and government agencies around the world. Teleglobe users will have access to a variety of high-quality textual and graphic information using interactive video terminals and normal telecommunications channels.

Information Providers for the Teleglobe data base have not been identified, but the system would be aimed at selected users in the public and private sectors during the trial period. Project organizers say the system might include trade information and market research that would help foreign businesses plan exports to Canada.

The data base will be owned and operated by Teleglobe Canada and plans call for creation of up to 100,000 pages of information during the three-year, $4.1 million project.

Teleglobe Canada is a Crown corporation providing international telecommunications traffic services to all countries except the U.S. Teleglobe represents Canada in Intelsat. The Teleglobe project will complement the overall Canadian marketing of Telidon technology. For more information about the Teleglobe project, contact: Ayesha Mohid (514) 281-5060 (Teleglobe Montreal) or Grace Lake (416) 364-8882 (Teleglobe Toronto).

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INFOMART OPENS U.S. OFFICE

Infomart has announced plans to open a new office in the U.S. to market Telidon and assist U.S. companies and agencies in developing videotex services. Infomart's new subsidiary is Videotex Systems Inc. (VSI) and is headed by Larry T. Pfister, former marketing vice president for Control Data, Harris Broadcast and Arbitron. Infomart, Canada's largest electronic publishing firm, was created by Southam Inc. and the Torstar Corporation. It is the official overseas marketing agent for the Telidon system. The new address for Infomart's U.S. operations is: Videotex Systems Inc., Three Landmark Square, Suite 400, Stamford, CT.06901 (203) 965-1981.

ROYAL COMMISSION INQUIRY

Telidon and other forms of electronic publishing are being studied by the Royal Commission on Newspapers, which was established last fall to study the effects of concentration of ownership in the Canadian newspaper industry.

Commission Chairman Tom Kent has appointed newsman Peter Desbarats as senior consultant to co-ordinate studies of the new technology. One research project will involve a study of all current Telidon field trials, while another will focus on social issues, including ownership and responsibilities of information providers.

Mr. Desbarats says he had little experience with videotex before he took the assignment, but he was intrigued by the new technology and felt the study would be useful. He notes that the Davey Commission barely touched on the effects of computers on journalism in its study a decade ago, and there have been major developments since then. For further information about the Kent Commission, contact: Peter Desbarats, Royal Commission on Newpapers, P.O. Box 1860 (Stn. B), Ottawa, K1P 5R5, (613) 996-1166.

A WIDER COLOUR RANGE

The Information Technology branch of the DOC Telidon program has developed a new system for blending existing Telidon colours to produce a wide range of subtle tones.

The new colours, including flesh tone, can be produced by using both the overlay and texture features to alternate standard colours on the display from pixel to pixel in the horizontal direction. In practice, one fills an area with one of the colours and overlays a DX-2 vertical-line fill pattern of the second colour.

Examples of the new combinations are displayed in the DOC English data base on pages 9641 through 9644. The technique was also used to achieve the right shade for the patina on the Parliament Building roof on page 188513 in the French data base. Other fill patterns could be used to produce an even wider range of tones using two or more colours.

STANDARD FOR TELIDON MODEMS

The standards sub-committee of the Canadian Videotex Consultative Committee (CVCC) is developing national standards for all equipment used in Telidon systems. The sub-committee recently finished drafting technical performance standards for 1200/150 bit modems for use with Telidon terminals. Copies of the technical standards for modems can be obtained from the Telidon Program office, Room 2000, Journal Tower South, 300 Slater St., Ottawa, Ontario K1A 0C8. Copies for other equipment standards will be available from the same address when they are approved.

TELIDON ACCOUNT NUMBERS

DOC has instituted a system of account numbers for users of the Telidon Demonstration Data Base. To make contact with "Stanley," the CRC Telidon host computer, users must now provide an account number and a numeric password. Account numbers may be obtained from: Janice Knapman, Telidon data base operator at Shirley's Bay, (613) 596-9056 while the operator is on duty from 8:30 a.m. to 4:30 p.m. The same hours and phone number apply for other requests for operator assistance.

All users are also reminded not to bother Stanley on Friday mornings between 8:30 and 10:30. The data base is closed to outside users once a week while Knapman puts Stanley through his paces as part of the preventive maintenance program.

VIDEOTEX CONFERENCE IN TORONTO

Major videotex systems from around the world will be displayed side by side for the first time in Toronto during Videotex '81 from May 20-22. Great Britain will display its Prestel system and France will display its Antiope equipment. Displays of Telidon equipment will allow viewers to access information provided for the Bell Vista trial, the TV Ontario trials and the federal Demonstration Data Base as well as pages prepared by companies such as Infomart and Hemton. Organizers plan 20 information seminars. Speakers booked to date include Richard Hooper, Director of Prestel; Chuck Phillips of Radio Shack; Roy Bright of Telematique; Jean Paul Maury of France's Electronic Directory Project; Albert Gillen of Knight-Ridder; Walter Ciciora of Zenith; Eric Danke of the West German Bildschirmtext trial; Peter Dolan of Teledirect; Paul Steinberger of Dow Jones; Hector Martinez of Venezuela's SOI project; Tony Book of American Express and David Carlisle of Infomart. For more information contact: Rossanne Lee, (416) 598-1981, Videotex '81, 316 Lonsdale Road, Suite 3, Toronto M4V 1X4, or Helen Underdown, Online Conferences Ltd., Argyle House, Northwood Hills, HA6 1TS, Middlesex, UK, (44) 9274-28211.

AWARD FOR TELIDON

The Communications Research Centre of the Canadian Department of Communications has been named as one of eight winners of the 1981 Touche Ross New Perspective Awards. The New York based company said the award is "in

recognition of the Centre's invention of Telidon, the two-way TV system that, because of its technology, is likely to become the standard for such systems throughout the world." Other winners of the Touche Ross award included economist Milton Friedman and the Children's Hospital Medical Centre in Washington, D.C.

PROJECT IDA UPDATE

Officials of the Manitoba Telephone System held a ribbon cutting ceremony this month to launch the official one-year evaluation trial of Project Ida in the Winnipeg suburb of South Headingley. Project Ida began operating in June, 1980 and all 30 home terminals for the multi-service trial have now been installed and debugged. While some terminals have been operating since last fall, MTS wanted to wait until the system was fully integrated before beginning formal evaluation. In addition to Telidon videotex service, Project Ida is being used to demonstrate inter-active functions such as closed-circuit request television service, automatic hydro and gas metering, remote alarm systems, stereo music on request and digital telephone service. A successful private demonstration of services on the Ida network was held for members of the Manitoba cabinet November 6. For more information about Project Ida, contact: Carolyn Rickey, Manitoba Telephone System, Box 6666, Winnipeg, Manitoba, (204) 947-7779. A subscription to Dialogue, the MTS newsletter on telecommunications services, is available from the same address.

MAN & COMPUTER CONFERENCE

The seventh conference of the Canadian Man-Computer Communications Society will be held at the University of Waterloo June 10-12. The conference, which will feature lectures and seminars on Telidon and other videotex systems, will be held in conjunction with meetings of the Canadian Image Processing and Pattern Recognition Society and the Canadian Information Processing Society. The conference will be preceded by two days of tutorials on computer-aided design, raster graphics, image processing and remote sensing. For more information: Yvonne Fink, Department of Computer Science, University of Waterloo, Waterloo, Ontario, N2L 3G1, (519) 885-1211 ext. 2191.

TELIDON AND TECHNOLOGY TRANSFER

The Department of Communications (DOC) and the Ministry of State for Science and Technology (MOSST) recently released a study entitled Technology Transfer by Department of Communications: A Study of eight innovations.*

*MOSST Background Paper, #12, authored by B. Bhaneya (MOSST), J. Lyrette (DOC), T.W. Davies (DOC), and R.M. Dohoo (consultant). Ottawa, Ministry of Supply and Services Canada, 1980, 48 pages. This publication is available free of charge from:
....
Communications Services Division
Ministry of State for Science and
  Technology
Ottawa, Ontario
K1A 1A1
Telephone: (613) 995-3093

The first part of this study deals with technology transfer in general while the second part deals with case histories of eight DOC innovations.

The following reproduces the Telidon case history.

Introduction

Telidon technology allows users to retrieve information from any number of data banks plugged into the system or eventually to have direct terminal-to-terminal contact with another user. The main components in Telidon are slightly modified television set or display monitor, the phone and/or cable, and a computer. The federal communications department announced in August 1978, the development of a key component in the system -- an interactive device between the communications system and the television set -- and was able to give laboratory demonstrations of the system. Telidon makes it possible for a user to employ his full home TV set to access information on anything from antique cars to zoology. A user can, for example, phone a data bank and by punching a few buttons on a key pad retrieve pages of information for display on his modified TV set. The information can be in textual and/or graphical form and can be transmitted to the user via the telephone line, coaxial cable, optical fibre or off-air broadcast for instant display.

Attached to the TV set is a special interface device which receives instructions from a computer and converts these signals into texts and images to appear on the screen. For home use, a key pad, or for business use, a key board (like a typewriter) can be wired to the device or operated by remote control.

History

Work in this area started around 1969 with computer-aided design for the CRC Space Program. After the transfer to the laboratory from DND (DRTE) to DOC, emphasis shifted to interactive graphics for communications purposes. From 1969 to 1973, considerable effort went into building special hardware and in producing the necessary software to establish a capability in interactive graphics. This led to the development of an interactive graphics programming language and later to the Picture Description Instructions. The latter represents an efficient protocol to interact graphics from one computer terminal to another over narrow band systems.

In September 1975, CRC became aware of Norpak Ltd. through work they had performed for DREO. CRC initiated a contract with Norpak for $15K for the development of hardware and software components for future interactive colour display systems based on the CRC developed technology. In November of the same year, a contract with Norpak was initiated to further develop, in close collaboration with CRC, a proto-type colour display system for a total of $19K.

From 1974 to 1976 a close working relationship developed between DREO's electronic warfare section, Norpak Ltd., and the CRC image communications section. At that time, CRC provided assistance and consultation to the former under the Military Communications Research Program. The military requirements for advanced display helped to focus some of the research

at CRC. War gaming at the Royal Military college (RMC) provided that first application of the concept of the common visual space. A small system was set up to test some of the ideas of grahic communications using CRC, DREO, RMC and the University of Manitoba as the nodes.

At the same time, the Image Communications Program was given approval to replace its existing computer (PDP-9) and display system (home-made) with a new system. CRC was so impressed with the ability and progress made by Norpak on the development system that DOC decided to order the total computer display system from Norpak at a total cost of $57K of which only $19K represented the display component. The other $38K covered the purchase of the PDP-11/40 computer system.

The total funding provided to Norpak in 1975 by CRC was $91K, of which only $72K represented development funding.

By 1976/77, the work at CRC was sufficiently advanced to produce three patent applications:

(i)   An Interactive Visual Communications System - February 1976;

(ii)   A Touch Sensitive Input Device for Computer Graphics Displays - January, 1977 (DND Sponsored Work);

(iii)   An Interactive Graphics Programming Language - March, 1979.

In 1976, Norpak Ltd. applied and obtained a license on (i) and in June 1976, Norpak Ltd. submitted an unsolicited proposal to DSS for the development of an Incremental Graphics Processor. The proposal was accepted and CRC, with assistance from MRC, acted as scientific authority. The contract was valued at $124K including $10K from CRC during FY 1976-77 and $5K in FY 1977-78, the remaining being DSS bridging funds. This proposal was accepted by the DSS review committee because it was very strong technically (all digital, micro-computer driven) and represented a new approach to traditional black and white display system design. Norpak's strong technical ability was again demonstrated by completing this 12 month developmental program approximately three months early.

Norpak applied for and was awarded the Department of Industry, Trade and Commerce's PAIT grant in July of 1976 for $360K, with $180K being supplied by the company. This funding was to be used to bring the products developed, in conjunction with CRC and DSS, to a production stage. This project was sufficiently productive and IT&C extended the project under the new EDP program for another six months. Then in August 1978, DOC announced its version of the Canadian Videotex System called Telidon and launched a $9.7M, four-year program. The cornerstone of the program was the equipment developed and built by Norpak Ltd. based on CRC technology.

It is clear that the technology transfer which occured during and after the development of Telidon was not achieved only by the transfer of information by license, but rather in repeated and continuing interchange of information between DOC and Norpak engineers over a long period of time.

CONCLUSION

In examining this case history, several events and attitudes which facilitated or hindered the successful transfer of technology can be identified:

(a) the existence of a small strong team with excellent R&D facilities at CRC;

(b) the existence of a company which had been funded earlier to establish itself and which was able to further develop the technology;

(c) the importance of government purchases to consolidate the technology transfer;

(d) the continuing design work undertaken at CRC in support of the R&D program;

(e) the availability, later in the transfer process, of funds intended to further develop the Telidon system;

(f) the availability of government programs to assist high technology companies in further developing the technology;

(g) the necessity of extensive direct interaction between the company and CRC; and

(h) the speedy development of the technology, with full management support.

MICROS FOCUSES ON TELIDON

Micros, the Canadian micro-systems journal, devoted much of its December issue to articles on Telidon and the future of two-way home information services.

Copies of Micros, Vol. 1 #3 are available for $3 from: Micros, 583 Ellice Ave., Winnipeg, Manitoba, Canada R3B 1Z7. (204) 783-7064. Canadian subscription rates are $18 per year. SYSTEMHOUSE AND TELIDON

(Editor's note: Starting with this issue, Telidon Reports will publish brief profiles of companies that helped develop the Telidon system.)

Systemhouse is an Ottawa-based systems consulting, design and development organization contracting to several major Canadian and international clients. Systemhouse managed certain software-related aspects of Telidons's implementation and developed several major component systems. The company designed and implemented a Telidon newswire service, an accounting and statistics collection system, message services, teleshopping, games and calculation functions. Systemhouse is now specifying the communications protocol between Information Provider systems and the host data base system. The company provides consulting services to Telidon system users. For more information about Systemhouse and Telidon, contact: Brian Greenleaf, Systemhouse, 99 Bank Street, Ottawa, Ont. K1P 6B9. (613) 236-9734